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I. *The Extract of a Letter from Sir Richard Bulkley, S. R. S. to Dr. Lister, concerning the Improvement to be made by Maize; with a Note on the same by John Ray, S.R.S.*

Vid. *Philos. Transact.* Numb. 142. **M**Y long Silence has only proceeded from my desire of having Matter worthy the communicating to you, which it was necessary for me to expect; I mean the Harvest of my *Maiz*, which notwithstanding that I sow'd it six Weeks later than I ought to have done, yet is it now, what is ripe, of so great profit, that it may, I verily believe, render useless the Cultivation of the Field White Pea, (to which Grain it is the most like in Taste and Figure). The greatest Profit that ever I have heard of White Pease, has been twenty Barrels reap'd for one sown; but this, I am sure, had I sown it in the middle of *April*, (whereas I sow'd it not 'till the end of *May*) it would have yielded me 1920 for one, perhaps twice or thrice so many for one, as you may judge by the following Computation: The *Grappe* I used for Seed, grew in *Brandenburg*, and it, and the rest that I did not yet sow, had eight Sides or Rows of Grain, each of which Rows has thirty Grains (perhaps, in its own Country, it may have more in a Row), so that each ripe *Grappe* has 240 Grains. I made Experiment with one of these in good Orchard Ground, (which had been indeed dung'd for some other Legumes the last Year) and sow'd them in Rows, each Row about a Yard asunder, and each Grain about a Foot asunder in the Row, taking care to preserve them from the Mice 'till above Ground. Now out of each Grain came up 3, 4, 5, or 6 Stems, (my *Suiss* says, he rarely has seen above two or three elsewhere) every of which Stems had four, three, or two of these *Grappes*. Now these Grains ripening gradually, that is those Grains first,

first, which are nearest the Stem , many of my *Grappes* have the Grains nearest the extremity or pointed end, but half or three quarters ripe ; but, it may be, as far as the 15th or 16th, and in some to the 20th Grain from the Butt-end are quite ripe. So then, if you will for your fancy compute, what would certainly have been, had I sow'd them in time, that each Grain give but three strong Stems, (and let the rest be cut off) and each of these Stems three *Grappes* (but some of them never fail of four) and each *Grappe* 240 Grains, that makes 2160 for one : Profit enough of all Conscience. But there are some things very odd in the manner of its growth, to those who have not cultivated it, of which you will pardon me the recital. It first sends up a thick reedy Stalk about a Yard high, with long Leaves of a very thick woody substance, and half a Yard long enwrapping the Stalk just like the *Iris*. At the top of this Stalk, when the Leaves open, there appears twenty or thirty Ears, as it were, of our unripe Wheat ; but this, when it is opened, must be plucked away, for it is nothing but the Flower ; and what is most surprising, the Fruit comes not where the Flower was, but on the inner-side of every Leaf, where it joyns to the stem, comes forth after a time, a large shoot, thicker than ones Wrist, at the end of which hangs out a bundle of fine strings, like a Horse-tail, which is the true Flower of the Plant : as this withers, the Fruit grows on within, being envelop'd in a great number of Leaves, which when they are withered, the Fruit is ripe, (but is never naked while on the stalks) and must then be taken off, and hung up to dry, or kept in Chests. It will serve for all the Uses of the White Pea, either in Bread (with Wheat) or Soupe, or Pudding, or with Pork. I reckon that eight or ten *Grappes* of it sown the next Year, will furnish me, God willing, with some Barrels of it. It must be earth'd up with the Howe twice or thrice in growing.

I am not yet ready to give you an Account of the *Hymette*

metto Bee-hives, tho' I have receiv'd great Instruction from them, nor shall venture to do it, 'till another Year's Experience of the propagating of them. I am quite dis-couraged as to making a Vineyard : for the Vines of this Country burst the Grape, and render to no purpose our Endeavours, having great Winds, and little Sun, &c.

Your affectionate humble Servant,

R. Bulkely.

Mr Ray's Note on the former Letter concerning the Maize.

I Have not much to say : He hath made a commendable Essay ; but whether it will turn to Account to plant Maize in Ireland, I think there is some reason to doubt : If it be equal in goodness to Pease, and an Acre planted with it will certainly yield more than one sown with Pease, without impoverishing the Land, then indeed it will be advantageous to plant it ; but if only an equal quantity, then tho' one Grain should yield a thousand-fold, all the advantage will be in the difference of the Seed, which is not very considerable, and which the Compendium of Sowing above Setting may in some measure counteract. As for the Description of the Plant, all the Parts of it have been so particularly and exactly described in English as well as Latin, that I think it needless to publish a new Description ; only I am by this Description confirmed in my Opinion, That there are two really distinct Species of Maiz : for what I have seen cultivated in Gardens, and have my self planted, ariseth to double the stature he ascribes to this, that is 7, 8, or 10 Feet ; and besides, with us, never brings the Seed near to perfection : but that I have seen planted in the Fields in Germany, is of about the same height with Sir Richard's, and ripens the Seed. Lobel also acknowledges two sorts thus differing.